

## **REMARKS/ARGUMENTS**

This Reply is submitted in response to the Office Action mailed January 30, 2008. Applicant's representative has scheduled an in-person interview with the Examiner for Thursday May 8, 2008. This reply is intended to serve as the basis for the interview discussions.

### **I. Introduction**

Claims 23-39 are pending in the application and stand rejected under 35 USC §103 based on an Examiner proposed combination of references. The references upon which the §103 rejections are based include US Patent No. 5,530,481 (the De With et al. patent), US Patent No. 5,805,224 (the Keesman et al. patent), US Patent No 6,014,466 (the Xia et al. patent) and US Patent No 5,757,668 (the Zhu patent).

As will be discussed below and in the interview, the rejections appear to be based on a misunderstanding of the claimed subject matter which is very different from what is being described in the applied references. In view of the following discussion, it is submitted that none of the pending claims are anticipated or rendered obvious by the applied references.

### **II. Brief Discussion of the Invention**

In various exemplary embodiments of the present application a region which occurs in each of a series of frames may be designated and protected in the sense of constraints with regard to motion compensated predictions which may be used in coding the series of sequential frames. The prediction restrictions imposed in various exemplary

embodiments facilitates image replacement, e.g., the ability to insert (replace) a picture or image in a portion of one or more frames in the series of frames, without affecting other portions of the frames. The Examiner seems to be attempting to interpret the "predetermined regions" recited in various claims as corresponding to blocks or macroblocks which are regions of orthogonal transform coding which can be used in motion compensated predictions. While the "predetermined regions" recited in the claims may correspond to one or more blocks or macroblocks of a frame, it should be appreciated that when the Examiner reviews how the macroblocks and blocks of the applied references are used in coding it should be appreciated that the methods and apparatus disclosed in the applied references do not disclose or suggest the claimed subject matter.

Generally speaking, the goal of the various references cited by the Examiner is to optimize coding efficiency through the use of motion vectors and/or other coding techniques. The coding constraints recited in the pending claims are contrary to a goal of optimizing coding efficiency.

Various exemplary embodiments described and claimed in the present application accept the risk of a reduction in coding efficiency to facilitate the ability to insert, e.g., an inset picture, easily. This reduced efficiency results from the constraints of limiting the image areas which can be used for particular motion compensated predictions. The techniques the Examiner cites are intended to maximize coding efficiency and do not disclose the features recited in various claims. In fact, by seeking to optimize coding

efficiency the references actually teach away from the coding restrictions imposed in various embodiments of the present invention which have the result of restricting predictions.

It is requested that the Examiner keep the above comments in mind when considering the remarks which follow.

### **III. The Rejections Under §103 Should Be Withdrawn**

#### **1) Claims 23-33 Are Patentable**

Representative claim 23 is directed to receiving encoded video data that was encoded in a specific manner, e.g., a manner that makes sure that a particular image area only uses for motion vectors which reference a corresponding image area which occurs in the same location in each of the series of images. The image areas recited in the claim are **predetermined prior to encoding**. Thus, the decoder can rely on the first predetermined image area occurring in the predetermined location regardless of the content of the encoded image.

The encoding constraint has the advantage that the motion vectors for the first image area will not reference other portions of the image. Thus, it is known that changes to the coded data corresponding to other portions of the image will not affect the decoding of the first image area. This facilitates decoding and reduces the risk of errors particularly where changes to the encoded image data may be made, e.g., to insert or modify a portion of an image.

The constraint recited in claim 23 on the encoded image data and the motion vector limitation recited therein is not taught, disclosed or suggested by the applied reference. The references fail to teach, disclose or suggest receiving encoded image data of the type recited in claim 23 and decoding the image data as recited in the claim. Accordingly, the rejection of claim 23 should be withdrawn.

Claim 23 is patentable because it recites:

A video processing method comprising the steps of:

receiving encoded video data representing **a series of images, said encoded video data having been encoded using motion compensated prediction on at least some of the images being encoded, each encoded image in said series of images including a first predetermined contiguous image area and a second predetermined contiguous image area, each of said first and second predetermined contiguous image areas being smaller than a full area of an image in said series of images, motion vectors for the first predetermined contiguous image areas using for predictions only pixels within first predetermined contiguous image areas, each of said first predetermined contiguous image areas being located at the same location in each of said series of images, said same location having been determined prior to encoding; and** decoding said received encoded video data.

In rejecting claim 23 the Examiner cites various portions of the De With patent but fails to clearly identify what the Examiner considers to be **"a first predetermined contiguous image area"** and **"a second predetermined contiguous image area"**. The Examiner cites figures 6A-6D and elements

150 and 160 of Fig. 5 as well as col. 4, lines 27-40. Figures 6A-6D show possible modes of referencing a search area in the motion compensator of figure 5. Applicant notes that the cited portion of the reference discusses how a block searching algorithm may be implemented using block coordinates to access blocks stored in a predication picture memory. Applicant notes that the Examiner fails to indicate in the rejection what is considered to be "a first predetermined contiguous image area" or the second such area. **Without clearly identifying precisely what the Examiner considers to correspond to these individual regions recited in the claim, it is difficult for Applicant to respond.** However, if the first and second predetermined regions are each to be interpreted as "a block of 8\*8 pixels" then it is respectfully submitted that encoding features recited in claim 23 would not be obvious since the restrictions imposed by the coding recited in claim 23 would interfere with the coding described in the De With et al. patent. **If the Examiner asserts that he believes that the first and second predetermined regions recited in claim 23 are something other than an individual block, it is requested that the Examiner explain during the interview precisely what is considered to correspond to the first and second predetermined regions.**

The Examiner seems to recognize the deficiency with regard to De With et al. patent stating:

It is noted that De With et al. does not particularly teach the predetermined contiguous image areas.

However, Keesman teaches the predetermined contiguous image areas (col. 1, lines 15-21) wherein the predetermined number of contiguous blocks (areas) are

prior encoding (1 of fig. 1). Therefore, taking the teachings of De With et al. and Keesman as a whole, it would have been obvious to one of ordinary skill in the art to modify the teachings of Keesman into the method of De With et al. allowing to reduce actually the complexity of the conventional ones.

The Keesman et al. patent describes a method of transcoding coded video signals and a corresponding device. (See abstract) The Examiner cites col. 1, lines 15-21 of the Keesman et al. patent. This portion of the reference describes what is commonly known as a macroblock, which as discussed in the cited portion of the reference is a grouping of blocks, e.g., four blocks of 8x8 luminance samples and two blocks of 8x8 chrominance samples.

**Applicant is unclear precisely how the Examiner proposes modifying the De With et al. patent to use macroblocks. It is noted however that the problem the Examiner has in the rejection is that the De With et al. not only fails to disclose the predetermined image areas recited in claim 23 it also fails to disclose the encoding constraints relating to the predetermined image areas.**

Applicants request that the Examiner be prepared to identify how precisely he is proposing to modify the De With et al. patent based on the Keesman et al. patent. **Replacing blocks with macroblocks would not result in the claimed subject matter.** How are macroblocks to be used in the De With et al. system?

In view of the above remarks it respectfully submitted that the rejections of claim 23-33 should be withdrawn since even if combined the applied references would not anticipate or render obvious the claimed subject matter.

2. Claims 34-39 are patentable

Claim 34 is patentable because it recites:

A method of processing video data comprising the steps of:

receiving encoded video data representing a second image that was encoded as a function of a first image, the first and second images each including a first and a second non-overlapping image segment, each of the first and second non-overlapping image segments including a plurality of vertically contiguous pixels, the first non-overlapping image segment occurring in the same location in each of the first and second images, the location of said first non-overlapping image segment being determined prior to encoding of the first and second images, **said encoded video data representing the second image using as reference data from the first image, only image data corresponding to the first image segment of the first image, for motion vectors representing a portion of the first image segment of the second image** and using as reference data from the first image, image data corresponding to the second image segment of the first image, for motion vectors representing a portion of the second image segment of the second image; and

decoding said received encoded video data.

While the Examiner asserts that the \$103 rejection is based on a combination of the Xia et al. patent and the Zhu et al. patent Applicant's representative can find no mention or use of Zhu et al. patent in the rejections. Accordingly, Applicant's representative will focus the following comments and discussion on the Xia et al. patent. However, Applicant's representative will be prepared to discuss the secondary reference if the Examiner intends to rely on it to reject the claims and can clarify why the secondary reference is being cited.

Applicant's representative notes that the Xia et al. patent is directed to an **object-based image/video coding algorithm** (NOT MPEG-2 coding) for coding arbitrarily shaped objects using lapped orthogonal transforms without block coding portions of the object, discarding transform coefficients required to reconstruct the object, double coding portions of the image, or masking the object with a rectangular window. (See col. 3, lines 46-51) Applicant's representative further notes that contrary to the Examiner's assertion (page 5 lines 3-6), the reference does **NOT describe** an "MPEG-2 encoder for encoding first and second frame) data..." The described object based coding technique is not an MPEG-2 encoding technique and differs greatly from standard MPEG-2 encoding. Applicant notes that the Examiner goes on in the rejection to state:

...the first non-overlapping image segment (object 38 of fig. 3) occurring in the same location in each of the first and second images (MPEG-2 encoding an image data based on the comparison first and second images).



Applicant's representative finds this statement confusing. The Examiner has failed to identify first and second images in the Xia et al. patent.

Claim 34 recites:

**the first non-overlapping image segment occurring in the same location in each of the first and second images, the location of said first non-overlapping image segment being determined prior to encoding of the first and second images**

Without identifying first and second images in the reference the Examiner states " Before the object can be encoded, its frame-to-frame motion must be compensated for (step 126 of fig. 12)"

If there is frame-to-frame motion, and the Examiner has failed to identify two sequential frames where the object 38 is in the same location as noted above, it should be appreciated that the Examiner has failed to establish that the object 38 is in the same location **"in each of the first and second images"**.

Applicant respectfully submits that the rejection of claims 34-39 seems to be based on some confusion with regard to what the applied reference shows and that, for at least the above discussed reasons, the rejection of claims 34-39 should be withdrawn.

Applicant's representative will be prepared to discuss the Xia et al. reference further during the interview and request that the Examiner be prepared to discuss and clarify

the rejection so that the discussion can be as meaningful as possible.

#### **IV. Conclusion**

In view of the foregoing amendments and remarks, it is respectfully submitted that the pending claims are in condition for allowance. Accordingly, it is requested that the Examiner pass this application to issue.

To the extent necessary, a petition for extension of time under 37 C.F.R. 1.136 is hereby made and any required fee in regard to the extension or this amendment is authorized to be charged to the deposit account of Straub & Pokotylo, deposit account number 50-1049.

None of the statements or discussion made herein are intended to be an admission that any of the applied references are prior art to the present application and Applicants preserve the right to establish that one or more of the applied references are not prior art.

Respectfully submitted,

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